

# Index Balearicum (III). An annotated check-list of the vascular plants described from the Balearic Islands. Additions (2008-2016) and corrections

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## Abstract

This compilation includes nomenclatural and taxonomic updates to the check-list of vascular plants described from the Balearic Islands. This update includes plants described between 2008 and 2016, and contains corrections to other entries included in previous works.

**Keywords:** vascular plants; nomenclature; taxonomy; Balearic Islands

**Resum.** *Index Balearicum (III). Catàleg comentat de les plantes vasculars descrites de les Illes Balears. Addicions (2008-2016) i correccions*

Aquesta compilació inclou actualitzacions nomenclaturals i taxonòmiques per al catàleg de plantes vasculars descrites de les Illes Balears. Aquesta actualització inclou plantes descrites entre 2008 i 2016 a més de correccions per a altres tractades en treballs anteriors.

**Paraules clau:** plantes vasculars; nomenclatura; taxonomia; Illes Balears

## Introduction

The first compilation of plant vascular taxa whose nomenclatural types are based on specimens collected at the Balearic Islands was presented by Rosselló & Sáez (2001) and updated a few years later (Rosselló & Sáez, 2008). Since this archipelago is one of the most studied European sites from a floristic point of view and a hot spot of taxonomic diversity, regular actualizations of this check-list become necessary from time to time. In this work, we include the new plant vascular taxa described from the

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Balearic Islands between 2007 and 2016, the new nomenclatural changes that are based on the Balearic names, and taxonomic or nomenclatural updates that are relevant to the scope of the work. In addition, we have corrected recognized mistakes present in previous compilations (Rosselló & Sáez, 2001, 2008).

## Material and methods

We have included all validly published names available to us whose type materials are explicitly described from the Balearic Islands, as well as those names that are based on Balearic specimens but not stated as this in the protologue. The names of the authors have been abbreviated according to Brummit & Powell (1992) and the journals are cited, with some exceptions, according to the suggestions of Lawrence et al. (1968). We have followed Stafleu & Cowan (1976-1988) for the citation of autonomous works. For practical reasons the names of families follow those used by Rosselló & Sáez (2001), although we are aware that this delimitation may not reflect current taxonomic boundaries.

## Results

### Apiaceae

*Apium bermejoi* L. Llorens in Folia Bot. Misc. 3: 28 (1982); ≡ *Helosciadium bermejoi* (L. Llorens) Popper & M.F. Watson in Pl. Syst. Evol. 187: 12 (2010)

*Bulbocastanum balearicum* Sennen in Bol. Soc. Ibér. Ci. Nat. 27: 138 (1928); ≡ *Bunium macuca* subsp. *balearicum* (Sennen) Rivas Mart. in Itinera Geobot. 15: 698 (2002)

*Daucus carota* subsp. *majoricus* A. Pujadas in Anales Jard. Bot. Madrid 59: 372 (2002); ≡ *D. gingidium* subsp. *majoricus* (A. Pujadas) Mart. Flores, Juan, M.A. Alonso, A. Pujadas & M.B. Crespo, Proyectos de investigación en parques nacionales: 2003-2006: 146 (2008)

Ind. loc.: “*Holotypus*.-*BALEARES*: Mallorca, Calviá, Santa Ponca, Punta Malgrats, 31SDD5373, 47 m, acantilado costero, 29-V-1986, A. Pujadas, COA 24662.”

Type material: COA.

Remarks: Name in current use (Pujadas, 2002, 2003). The taxonomy and evolutionary relationships of the wild *Daucus* populations from the Balearic Islands are far from satisfactory and are in need of a deep clarification. The transfer of *D. carota* subsp. *majoricus* within *D. gingidium* is based on the morphological analysis of local populations not covering the whole range of variation, and appears to be currently premature (Crespo et al., 2008).

*Helosciadium ×clandestinum* Rita, Capó & Cursach in Flora Montiberica 63: 133 (2016)

Ind. loc.: “*HOLOTYPUS*, ESP[AÑA], Balearic Islands (Minorca): Mongofre

Vell, 39°59'N, 4°13'E, 13' E, June 13, 2015, on the bank of the torrent. Leg: J. Rita, M. Capó & J. Cursach (Herbari de la Universitat de les Illes Balears, n° 16818, H1). Isotypus, Herbari de la Universitat de les Illes Balears.”

Type material: Universitat de les Illes Balears (holotype, isotype).

Remarks: This is the wild hybrid between *H. bermejoi* and *H. nodiflorum* (L.) W.D.J. Koch. It was described from a locality where *H. bermejoi* individuals were translocated near *H. nodiflorum* specimens (Rita et al., 2016). It also occurs in the living collections of the Botanical Garden of Sóller (Majorca) where the two parents grow together (M. Vicens, pers, comm.).

#### Asteraceae

*Helichrysum massanellianum* Herrando, J.M. Blanco, L. Sáez & Galbany in Collect. Bot. (Barcelona) 35: e009 (2016)

Ind. loc.: “Type: [Spain. Balearic Islands] Mallorca: Serra de Tramuntana, Coll de Ses Cases de Neu, c. Coll des Telègraf, 1205 m, Ca., 21.06.2001, M. Galbany & L. Sáez s. n. (holotype: BCN 20580! (Fig. 7); isotype: BC 939749!).”

Type material: **BCN** (holotype); **BC** (isotype).

Remarks: This species belongs to the *H. italicum* (Roth) G. Don complex, an intricate group of Mediterranean entities showing closely related morphologies (Herrando-Moraira, 2016). The known population of *H. massanellianum* is considered to be restricted to Majorca, although it was previously identified as belonging to *H. italicum* subsp. *microphyllum* (Willd.) Nyman (Duvigneaud, 1979).

*Hieracium balearicum* Arv.-Touv., Hier. Gall. Hisp. Cat.: 157 (1913); = *H. elisaeanum* subsp. *balearicum* (Arv.-Touv.) Greuter in Wildenowia 37: 151 (2007)

*Santolina chamaecyparissus* var. *vedranensis* O. Bolòs & Vigo in Collect. Bot. (Barcelona) 17: 90 (1987); = *S. vedranensis* (O. Bolòs & Vigo) L. Sáez, M. Serano, S. Ortiz & R. Carbajal in Phytotaxa 291: 221 (2017)

Remarks: Known from a single population from Es Vedrà islet (west coast of Ibiza) and apparently restricted to the Balearic Islands. On the basis of phylogenetic analysis of plastidial DNA sequences, Carbajal & al. (2017) suggested that this taxon is more closely related to *S. villosa* Mill., *S. virens* Mill., and *S. benthamiana* Jord. & Fourr. than to the Balearic *S. magonica* (O. Bolòs, Molin. & P. Monts.) Romo.

*Senecio rodriguezii* Willk. ex J.J. Rodr. in Anales Soc. Esp. Hist. Nat. 3: 36 (1874)

Type material: Calvo & Aedo (2013) selected a lectotype for this species (Spain, Menorca, Maó, Mongofre-nou, 22 Apr 1872, Rodríguez y Femenías; BC 861953). However, they were not apparently aware of the lectotypification made by Roselló & Sáez (2001: 39) which predates their choice.

Remarks: Calvo & Aedo (2013) proposed to conserve the name *Senecio rodriguezii* over the older correct name *S. varicosus* L. f. in order to preserve nomen-

clatural stability. However, the Nomenclature committee for Vascular Plants rejected this proposal on the basis that name *S. rodriguezii* is not used widely enough that its loss appears to be substantially disadvantageous (Applequist, 2014).

***Senecio varicosus*** L. f., Dec. Pl. Horti Upsal. 1: 9 (1762)

Ind. loc.: “Habitat in Aegypto.”

Type material: Herb. Linnaeus No. 996.25 (LINN, lectotype; Nordenstam, 2005). See Calvo & Aedo (2013) for details about the provenance of the original material of this species.

Remarks: According to Nordenstam (2005) the type of this species matches the eastern Balearic endemic *S. rodriguezii* Willk. ex J.J. Rodr. from which it has nomenclatural priority. It was proposed to conserve the name *Senecio leucanthemifolius* against *S. varicosus* (proposal 1696; Nordenstam, 2005) and a positive recommendation was taken by the Nomenclature committee for Vascular Plants (Brummit, 2007).

***Taraxacum balearicum*** Soest in Acta Bot. Neerl. 10: 282 (1961)

Remarks: According to Galán de Mera & Sáez (2016) this species cannot be differentiated from *Taraxacum mediterraneum* Soest, an endemic species from southern France and Majorca.

***Taraxacum majoricense*** A. Galán & L. Sáez in Ann. Bot. Fennici 53: 83 (2016)

Ind. loc.: “Type: Spain. Illes Balears. Mallorca, Puig Major de Son Torrella, depressions càrstiques, 31SDE8206, 1370 m a.s.l., 29 June 2011 X. Rotllan & L. Sáez LS7297 (holotype USP; isotype MA).”

Type material: **USP** (holotype); **MA** (isotype).

Remarks: According to Galán de Mera & Sáez (2016) this species belongs to section *Erythrosperma* (H. Lindb.) Dahlst. and it is restricted to the mountains of Majorca.

## Caryophyllaceae

***Polycarpon colomense*** Porta in Nuovo Giorn. Bot. Ital. 19: 305 (1887); = *P. tetraphyllum* subsp. *colomense* (Porta) Iamonico & Domina in Pl. Biosystems 149: 275 (2015)

Type material: Iamonico & Domina (2015) selected a lectotype for this species (Balearicum insula Minore, in agris restilib. insulae parvae “Colem”, 11 Apr 1885, P. Porta & G. Rigo s.n.; JE-00014346). However, they neglected the lectotypification made by Rosselló & Sáez (2001: 51) which predates their choice. Syntypes of the species were located at KFTA and LECB herbaria by Iamonico & Domina (2015).

Remarks: The inclusion of the perennial species of *Polycarpon* (including *P. colomense*) at the subspecific level under the weedy annual *P. tetraphyllum* (L.) L. (Iamonico & Domina, 2015) appears untenable on the basis of available morpho-

logical, molecular and cytogenetic evidence (Rosselló & Castro, unpublished data).

***Polycarpon dunense*** P. Fraga & Rosselló in Fl. Montiberica 47: 30 (2011);  $\equiv$  *P. tetraphyllum* subsp. *dunense* (P. Fraga & Rosselló) Iamonico in Willdenowia 45: 120 (2015)

Ind. loc.: “Type: Minorca. In arenosis loco dicto Arenal de sa Cavalleria ad 10 m, 31TEE919348, ubi P. Fraga 31-III-1996 legit (Holotypus: VAL202229; Isotype: herbarium P. Fraga).”

Type material: **VAL** (holotype).

Remarks: Name in current use (Iamonico, 2015). This is a diploid ( $2n=16$ ) annual species endemic to the coastal sand dunes of northern Minorca (Fraga & Rosselló, 2011). Iamonico & Domina (2015: 726) erroneously reported the authorship of the nomenclatural change made by Iamonico (2015) as *P. tetraphyllum* subsp. *dunense* (P. Fraga & Rosselló) Iamonico, Bartolucci & Peruzzi.

#### Colchicaceae

***Merendera filifolia*** Cambess. in Mém. Mus. Hist. Nat. Paris 14: 319 (1827), reprinted with independent pagination as Enum. Pl. Balear. (Paris): 147 (1827);  $\equiv$  *M. bulbocodium* subsp. *filifolia* (Cambess.) Bonnier & Layens, Tabl. Syn. Pl. Vasc. France: 291 (1894);  $\equiv$  *Colchichum filifolium* (Cambess.) Stef. in Sborn. Balg. Akad. Nauk. Klon Prir.-Mat. 22: 58 (1926);  $\equiv$  *Bulbocodium filifolium* (Cambess.) Cuatrec. in Trab. Mus. Ci. Nat. Barcelona 12: 224 (1929), nom. illeg.

#### Convolvulaceae

***Convolvulus pentapetaloides*** L., Syst. Nat. ed. 12, 3: 229 (1768);  $\equiv$  *C. tricolor* subsp. *pentapetaloides* (L.) O. Bolòs & Vigo in Collect. Bot. (Barcelona) 14: 90 (1983)

Ind. loc.: “Habitat in Majorca. Gerard”

Type material: A lectotype (LINN 218.41) was designated by Sa’ad (1967: 207). However, this choice might be rejected since Wood et al. (2015) reported that the herbarium sheet has no indication of locality and it is indicated that the specimen was collected by Latourette, which does not fit with the information provided in the original description.

Remarks: Name in current use (Sa’ad, 1967; Wood et al., 2015).

#### Dipsacaceae

***Cephalaria squamiflora*** var. *ebusitana* O. Bolòs & Vigo in Collect. Bot. (Barcelona) 17: 89 (1988);  $\equiv$  *C. ebusitana* (O. Bolòs & Vigo) Bacch., Brullo & Giusso in Edinburgh J. Bot. 65: 151 (2008);  $\equiv$  *C. squamiflora* subsp. *ebusitana* (O. Bolòs & Vigo) Domina in Willdenowia 45: 454 (2015), comb. superfl.

## Euphorbiaceae

***Euphorbia nurae*** P. Fraga & Rosselló in Candollea 66: 182 (2011)

Ind. loc.: “Typus: BALEARIC ISLANDS. Minorca: Es Berrecks de Santa Anna, Ciutadella de Menorca (31SEE807212), ephemeral pastures on thin, limestone soils, 30 m, 31.III. 1996, P. Fraga s.n. (holo-: VAB [202781])”

Type material: **VAL** (holotype).

Remarks: This species is endemic to coastal areas of Minorca (Fraga & Rosselló, 2011). It belongs to section *Cymatospermum* (Prokh.) Prokh. and on morphological grounds it is most related to *E. exigua* L., *E. dracunculoides* Lam. and *E. sulcata* Loisel.

## Fabaceae

***Coronilla montserratii*** Fraga & Rosselló in Fl. Montiberica 46: (2010)

Ind. loc.: “Holotype: SPAIN: Balearic Islands. Minorca: Arenal de Macarelleta, Ciutadella de Menorca (31SEE7921), fixed calcareous sand dunes with low scrub, 20 m, 31-03- 1996, P. Fraga (VAL 190331). Isotype: Herbarium P. Fraga.”

Type material: **VAL** (holotype).

Remarks: This hexaploid species is endemic to Minorca and can be distinguished from the related *C. repanda* by a distinct leaf morphology and ploidy level (Fraga & Rosselló, 2010). The join evaluation of morphological and molecular data suggests that *C. montserratii* is an allopolyploid species originated from hybridization between *C. scorpioides* and *C. repanda* as likely progenitors (Fraga & Rosselló, 2010). The records of the Mediterranean *C. repanda* (Poir.) Guss. in Minorca are misidentifications with *C. montserratii*. *Coronilla montserratii* is a taxonomic synonym of *C. repanda* var. *montserratii* O. Bolòs & Vigo (Bolòs & Vigo 1974).

## Hyacinthaceae

***Brimeura duvigneaudii*** subsp. *occultata* L. Sáez, Rita, Bibiloni, Roquet & López-Alvarado in Orsis 25: 63 (2011)

Ind. loc.: “Holotypus Balearic Islands: Mallorca, torrent de Coma Freda, 31SDE9105 270 m, calcareous shady cliffs, 26-V-2003, L. Guàrdia Valle & L. Sáez LS-6109 (BC 904039). Isotypus: (ibidem, L. Sáez, herb. pers.-BCB).”

Type material: **BC** (holotype, isotypus).

Remarks: The single known population of this subspecies was previously included under the range of variation of *B. duvigneaudii* subsp. *duvigneaudii* (Almeida de Silva et al., 2001). See Sáez et al. (2011) for the reasons supporting its discrimination from the typical *B. duvigneaudii*.

## Iridaceae

***Gladiolus communis*** var. *montserratii* O. Bolòs & Vigo, Fl. P. Catalans 4: 166 (2001)

Ind. loc.: “Binisermenya (Menorca), ubi leg. P. Font i Quer die 6-V-1913, BC 61019”

Type material: **BC** (holotype).

Remarks: This variety has been included within *G. communis* L. without any taxonomic distinction (Alonso & Crespo, 2013).

## Lamiaceae

*Micromeria barceloi* Willk. in Oesterr. Bot. Z. 25: 111 (1875); = *M. approximata* subsp. *barceloi* (Willk.) Nyman, Consp. Fl. Eur.: 590 (1881), nom. illeg.; = *M. approximata* [unranked] *barceloi* (Willk.) Gand., Nov. Consp. Fl. Eur.: 367 (1910), nom. illeg.

Type material: Bräuchler et al. (2008) selected a lectotype for this species (Balears, Mallorca colina calcarea al O. de Palma, 14.11.1873, *Willkomm s.n.*; MA). However, the lectotypification made by Rosselló & Sáez (2001: 99) pre-dates their choice.

*Micromeria filiformis* var. *glandulosa* Sennen & Pau in Treb. Inst. Catalana Hist. Nat. 3: 193 (1917); = *M. xglandulosa* (Sennen & Pau) Sennen in Bol. Soc. Ibér. Ci. Nat. 32: 62 (1934)

Type material: Bräuchler et al. (2008) selected the same lectotype chosen by the early work of Rosselló & Sáez (2001: 102). An isolectotype is present at MA according to Bräuchler et al. (2008).

*Micromeria filiformis* var. *rubrifolia* Sennen & Pau in Treb. Inst. Catalana Hist. Nat. 3: 193 (1917).

Type material: Bräuchler et al. (2008) selected the same lectotype chosen by the early work of Rosselló & Sáez (2001: 101). An isolectotype is present at MA according to Bräuchler et al. (2008).

*Micromeria rodriguezii* Freyn & Janka in Oesterr. Bot. Z. 24: 16 (1874); = *M. nervosa* [unranked] *rodriguezii* (Freyn & Janka) Gand., Nov. Consp. Fl. Eur.: 367 (1910), nom. illeg.

Type material: Lectotype designated Bräuchler et al. (2008) at STU (Menorca, in valle Varranco del Favaret prope Mahon ad rupes calcareas, 29.3.1873, Hegelmaier, Iter gallico-hispanicum 1873). An isolectotype and syntypes are held at JE at STU (Bräuchler et al., 2008).

*Satureja rodriguezii* var. *condensata* L. Chodat in Bull. Soc. Bot. Geneve, ser. 2, 15: 234 (1924)

Type material: Bräuchler et al. (2008) selected the same lectotype chosen by the early work of Rosselló & Sáez (2001: 102).

*Satureja rouyana* Briq., Lab. Alp. Mar.: 442 (1895); = *Clinopodium rouyanum* (Briq.) Govaerts, World Checkl. Seed Pl. 3(1): 18 (1999); = *C. rouyanum* (Briq.) Rosselló in Fl. Montiber. 33: 18 (2006), comb. superfl.



*Thymus filiformis* Aiton, Hort. Kew. 2: 313 (1789); ≡ *M. biflora* f. *filiformis* (Aiton) Knoche, Fl. Baléar. 2: 348. 1922, nom. illeg

Type material: A lectotype was designated by Bräuchler et al. (2008) at BM (Banks herbarium: Insulae Baleares, *Jacquin*). Apparently, the Jacquin sheet represents the only preserved part of the original material (Bräuchler et al., 2008).

## Malvaceae

*Lavatera minoricensis* Cambess. in Mém. Mus. Hist. Nat. 14: 334-335 (1827); ≡ *L. triloba* subsp. *minoricensis* (Cambess.) P. Escobar in Anales Jard. Bot. Madrid 67: 83 (2010); ≡ *Malva micans* subsp. *minoricensis* (Cambess.) Bartolucci & F. Conti in Ann. Bot. Fennici 49: 124 (2012)

Remarks: The taxonomic rank in which this Minorcan plant should be distinguished has been controversial, although there is recent agreement that the sub-specific level is appropriate (Escobar et al., 2010; Conti & Bartolucci, 2012). Traditionally, the Balearic plant has been included within the *Lavatera triloba* aggregate, a group of perennial herbs or sub-shrubs endemic to the western Mediterranean region. The maintenance of *Malva* and *Lavatera* as circumscribed (e.g., Fernandes, 1968) on the basis of the the epicalyx features is not satisfactory, and recent molecular studies have also shown that their differentiation using these features is artificial and untenable (Ray, 1995; Escobar et al., 2009).

## Orchidaceae

*Ophrys decembris* S. Moingeon & J.-M. Moingeon in J. Eur. Orch. 43: 75 (2011) Ind. loc.: “Holotypus: Hispania, Baleares insulae, Majorica, Santanyi, Mondragonis Naturalis Ager, Alt. s.m. 10 m, 7.XII.2010. In herb. Herb. Jean-Marc Moingeon sub n° MA20101207-01”

Type material: Herb. Jean-Marc Moingeon (holotype).

Remarks: This species belongs to the *Ophrys fusca* aggregate and its taxonomic recognition as an independent species is very doubtful. The morphological and phenological features used by Moingeon & Moingeon (2011) to describe this species are at odds with the many known intermediates linking the ends of a wide continuum shown by the representatives of the complex in the Balearic Islands. The populations recognised as *O. decembris* have been largely known from the archipelago, where they are widespread, and have been usually included within the polymorphism exhibited by *O. fusca* Link.

*Ophrys tenthredinifera* subsp. *spectabilis* Kreutz & Zelesny in Ber. Arbeitskreis. Heimische Orchid. 24: 116 (2007); ≡ *O. spectabilis* (Kreutz & Zelesny) Paulus in J. Eur. Orch. 43: 38 (2011)

Ind. loc.: “Holotypus: Spanien (Mallorca): Capdella, Gremola-Pass (Serra de Tramuntana), leg. H. PRESSER, 8.4.2007 (L).”

Type material: L (holotype).



Remarks: The subtle morphological features used to discriminate this taxon from typical *O. tenthredinifera* Willd. (Kreutz, 2007; Paulus, 2011) are of very reduced taxonomic value. Available evidence suggests that *O. tenthredinifera* subsp. *spectabilis* should be merged within the range of variation of *O. tenthredinifera*. *Ophrys tenthredinifera* subsp. *spectabilis* has been reported also to occur in Algeria (Kreutz et al., 2013, 2014), but some authors suggest that these north-African populations should be referred to *O. ficalhoana* J.A. Guim (Benito, 2016). Field pollination observations on Balearic populations of *Ophrys tenthredinifera* subsp. *spectabilis* are given in Benito (2016).

***Ophrys ×melineae*** S. Moingeon & J.-M. Moingeon in J. Eur. Orch. 45: 213 (2013)

Ind. loc.: “Holotypus: Hispania, Baleares insulae, Majorica, Andratx. Alt. s.m. 10 m, 11.IV.2011. In herb. Jean-Marc Moingeon sub n° MA20110411-01.”

Type material: Herb. Jean-Marc Moingeon (holotype).

Remarks: Morphological evidence suggests that this hybrid was originated from a cross between *O. bombyliflora* Link. and *O. tenthredinifera* subsp. *spectabilis* (Moingeon & Moingeon, 2013). If *O. tenthredinifera* subsp. *spectabilis* is not recognised as an independent taxon, and it is subsumed within *O. tenthredinifera* subsp. *tenthredinifera*, the earlier name available for this hybrid combination is *Ophrys ×sommieri* E.G. Camus.

***Ophrys ×soller*** Henkel in Ber. Arbeitskrs. Heim. Orchid. 17: 121 (2000)

Ind. loc.: “Holotypus: Spanien/Mallorca, Col de Soller, leg. M- Henkel, 15.4.1999, in Herb. Naturkundemuseum Kassel.”

Type material: Herb. Naturkundemuseum Kassel (holotype).

Remarks: Morphological evidence suggests that this hybrid was originated from a cross between *O. apifera* Huds. and *O. speculum* Link. This hybrid was formally described from Balearic material but it is known to occur elsewhere.

## Orobanchaceae

***Orobanche iammonensis*** A. Pujadas & P. Fraga in Bot. J. Linn. Soc. 158: 723 (2008)

Ind. loc.: “Holotype: BALEARIC ISLANDS, Menorca, Ciutadella, Cala Morell, 31TEE7634, 60 m, sobre *Anthemis maritima* L., 13.iv.2001, P. Fraga & A. Pujadas (COA 31019). Isotype: BM, MA.”

Type material: COA (holotype), BM (isotype); MA (isotype). An additional isotype of the species is present at G (00424977) and can be traced at <<http://plants.jstor.org/stable/10.5555/al.ap.specimen.g00424977>>.

Remarks: According to Pujadas & Fraga (2008) *O. iammonensis* belongs to section *Orobanche* L. grex *Minores* (Beck) Teryokhin. The plant is believed to be endemic to the west coast of Minorca and is mainly related to *O. litorea* Guss., a species widely distributed in the central Mediterranean. Both species parasitic on *Anthemis maritima* L. individuals. Sánchez Pedraja et al. (2005) cast doubts about

the taxonomic value of the Balearic species, and suggested with doubts that it could be a yellow form of *Orobanche sanguinea* C. Presl.

***Orobanche rumseiana*** A. Pujadas & P. Fraga in Candollea 67: 66 (2012)

Ind. Loc.: “Typus: Spain. Balearic Islands, Majorca: Pollença, Cala Sant Vicenç, c. Punta de Ses Coves Blanques, 31SEE0419, 103 m, parasitic on *Rosmarinus officinalis*, 2.V.2003, A. Pujadas s.n. (holo-: COA [49186]; iso-: BM, G, MA).”

Type material: COA (holotype), BM (isotype); G (isotype); MA (isotype).

Remarks: This species was described on the basis of specimens parasiting on *Rosmarinus officinalis* L. from coastal rocky areas of Majorca and Minorca. *Orobanche rumseiana* was included by Pujadas & Fraga (2012) within subgenus *Trionychon* (Wallr.) Spach.; it is closely related to *Orobanche rosmarina* Beck (with which it was previously misidentified), *O. mariana* A. Pujadas, and *O. pseudorosmarina* A. Pujadas & Muñoz Garm. However, Sánchez Pedraja et al. (2017) reported it within the synonymy of *Phelipanche rosmarina* (Beck) Banfi, Galasso & Soldano, since the small variations differentiating both species (lobes shape, indumentum, etc.) could be influenced by the habitat. Plants attributable to *O. rumseiana* have been identified from Cabrera island and are reported elsewhere than the type locality at Majorca, even at remarkable high altitudes (above 1000 m a.s.l.).

## Poaceae

***Brachypodium stacei*** Catalán, Joch. Müll., Mur & T. Langdon in Ann. Bot. (Oxford) 109: 402 (2012)

Ind. loc.: “Spain: Balearic Isles: Formentera: Torrent, ABR114 inbred line, from seeds cultivated at Aberystwyth University, 30 October 2010, collector Luis Mur (holotype MA, isotypes JE, K).”

Type material: MA (holotype), JE (isotype); K (isotype).

Remarks: *Brachypodium stacei* is a diploid ( $2n=20$ ) species described from the western Balearic Islands, but the species shows a wider Mediterranean distribution and it is also known to occur on Majorca and Minorca islands (López-Álvarez et al., 2012). *Brachypodium stacei* plants were previously included within a wide species concept in *B. distachyon* (L.) P. Beauv. According to Catalán & al. (2012), morphologic, cytogenetic and molecular differences detected among the three *B. distachyon* cytotypes allow their taxonomic separation into three distinct species.

## Rhamnaceae

***Rhamnus ×bermejoi*** P. Fraga & Rosselló in Flora Montiber. 40: 48 (2008)

Ind. loc.: “HOLOTYPE: Minorca: Tirant, coastal scrub, 23-08-2008, P. Fraga (VAL 189259).”

Type material: VAL (holotype).

Remarks: Name in current use (Rivas Martínez & Pizarro, 2013). This is the putative  $F_1$  hybrid between the Mediterranean *R. alaternus* L. subsp. *alaternus* and the

Balearic endemic *R. ludovici-salvatoris* Chodat. Previously, the name *R. xjacobis-salvadori* O. Bolòs & Vigo was believed to apply to the hybrid between both species (Bolòs & Vigo, 1974). However, the study of Rosselló & Mus (1988) clearly revealed that the holotype could not be distinguished from *R. alaternus*, and it was considered as a mere variation of this species.

***Rhamnus bourgaeana*** [*bourgeanus*] Gand. in Bull. Soc. Bot. France 47: 135 (1900); ≡ *Rh. oleoides* subsp. *bourgaeana* (Gand.) Rivas Mart. & J.M. Pizarro in Castrov. & al. (eds.) Fl. Iber. 9: 32 (2013).

Remarks: Name in current use (Rivas Martínez & Pizarro, 2013). The distinction of the Balearic plant from the *Rh. lycioides* L. complex (including *Rh. oleoides*) awaits a sound study which is currently lacking.

***Rhamnus ludovici-salvatoris*** R. Chodat in Bull. Soc. Bot. Genève 2 ser. 1: 242 (1909); ≡ *Rh. balearicus* Willk. in Oesterr. Bot. Z. 25: 112 (1875), nom. illeg.; ≡ *Rh. alaternus* subsp. *balearicus* (Willk.) Gand., Nov. Consp. Fl. Eur.: 99 (1910), nom. illeg.

Type material: Lectotype designated by Rivas Martínez & Pizarro (2013: 43-44) at COI-WILLK (Mallorca: in dumetis in regionis silvarum (quercetanus) lateris australis austro-orient. montis Puig gros de Ternellas, 26 Apr 1873, M. Willkomm (Herb. balear. N. 348), 00064331, bottom specimen). The earlier lectotypification made by Rosselló & Sáez (2001) is erroneous and should be discarded.

## Rosaceae

***Cotoneaster majoricensis*** L. Sáez & Rosselló in Candollea 67: 245 (2012)

Ind. loc.: “Typus: SPAIN. Balearic Islands, Majorca: Puig Major de Son Torrella, Sa Coma Fosca, couloir nord, 31SDE8206, 1380 m, shady vertical limestone cliffs, 25.VI.2004, L. G. Valle & L. Sáez LS-6177 (holo-: BC [903452]!; iso-: BCB (Herb. L. Sáez)).”

Type material: **BC** (holotype), **BCB** (isotype).

Remarks: The species is the only representative of the genus in the Balearic archipelago. It belongs to section *Cotoneaster* Medik. and is morphologically close to *C. tomentosus* (Aiton) Lindl. and *C. rabourensii* K.E. Flink & al. (Sáez & Rosselló, 2012).

## Scrophulariaceae

***Linaria rodriguezii*** Porta in Nuovo Giorn. Bot. Ital. 19: 314 (1887); ≡ *Chaenorhinum origanifolium* subsp. *rodriguezii* (Porta) Güemes in Castrov. & al. (eds.) Fl. Iber. 13: 172 (2009).

## Bibliographical references

- Almeida da Silva, R.M.; Sáez, L.; Rosselló, J.A. 2001. Taxonomy of the genus *Brimeura* (Hyacinthaceae). *Folia Geobot.* 36: 193–208.
- Alonso, M.A.; Crespo M.B. 2013. *Gladiolus* L. In Rico, E; Crespo, M.B.; Quintanar, A.; Herrero, A.; Aedo, C. (eds.), *Flora iberica XX, Liliaceae-Agavaceae*: 485–491. Madrid: Real Jardín Botánico, CSIC.
- Applequist, W.L. 2014. Report of the Nomenclature Committee for Vascular Plants: 66. *Taxon* 63: 1358–1371.  
<<https://doi.org/10.12705/636.20>>
- Benito, J. 2016. *Eucera (Synhalonia) rufa* (Apoidea) polinizador efectivo de *Ophrys spectabilis* (Orchideaceae). *Fl. Montiberica* 62: 67–73.
- Bolòs, O.; Vigo, J. 1974. Notes sobre taxonomia i nomenclatura de plantes, I. Butll. Inst. Catalana Hist. Nat. 38: 61–89.
- Bräuchler, C.; Ryding, O.; Heubl, G. 2008. The genus *Micromeria* (Lamiaceae), a synoptical update. *Willdenowia* 38: 363–410.  
<<https://doi.org/10.3372/wi.38.38202>>
- Brummit, R.K. 2007. Report of the Nomenclature Committee for Vascular Plants: 59. *Taxon* 56: 1289–1296.
- Brummit, R.K.; Powell, C.E. 1992. Authors of plant names. Kew. Royal Botanic Gardens.  
<<http://www.jstor.org/stable/25065923>>.
- Calvo, J.; Aedo, C. 2013. (2147) Proposal to conserve the name *Senecio rodriguezii* against *S. varicosus* (Compositae). *Taxon* 62: 632–633.  
<<https://doi.org/10.12705/623.23>>
- Carbajal, R.; Serrano, M.; Ortiz, S.; Sáez, L. 2017. Two new combinations in Iberian Santolina (Compositae) based on morphology and molecular evidences. *Phytotaxa* 291: 217–223.  
<<https://doi.org/10.11646/phytotaxa.291.3.6>>
- Catalán, P.; Müller, J.; Hasterok, R.; Jenkins, G. Mur, L.A.J.; Langdon, T.; Betekhtin, A.; Siwinska, D.; Pimentel, M.; López-Álvarez, D. 2012. Evolution and taxonomic split of the model grass *Brachypodium distachyon*. *Ann. Bot. (Oxford)* 109: 385–405.  
<<https://doi.org/10.1093/aob/mcr294>>
- Conti, F.; Bartolucci, F. 2012. Two new combinations in *Malva* (Malvaceae). *Ann. Bot. Fennici* 49: 123–124.  
<<https://doi.org/10.5735/085.049.0121>>
- Crespo, M.B.; Juan, A.; Alonso, M.A.; Martínez F.; Martínez, M. 2008. Biodiversidad vegetal del Parque Nacional de Cabrera: Biología de la Conservación y diseño de estrategias de gestión de endemismos vasculares insulares. *Proyectos de investigación en parques nacionales 2003–2006*: 129–148.
- Duvigneaud, J. 1979. Catalogue provisoire de la flore des Baléares. Deuxième édition. *Soc. Ech. Pl. Vasc. Europe* 17 (Suppl): 1–43.
- Escobar, P.; Mascia, F.; Bacchetta, G. 2010. Typification of the name *Lavatera triloba* subsp. *pallascens* (Moris) Nyman and reassessment of *L. minoricensis* Cambess. (*L. triloba* subsp. *minoricensis* comb. nov.). *Anales Jard. Bot. Madrid* 67: 79–86.  
<<https://doi.org/10.3989/ajbm.2244>>
- Fraga, P.; Rosselló, J.A. 2010. *Coronilla montserratii*, a new hexaploid annual species from the eastern Balearic Islands. *Fl. Montiberica* 46: 19–26.
- Fraga, P.; Rosselló, J.A. 2011. *Polycarpon dunense* (Caryophyllaceae) a new psammophilous species from Minorca (Balearic Islands). *Fl. Montiberica* 47: 29–35.

- Galán de Mera, A.; Sáez, L. 2016. *Taraxacum majoricense* (Asteraceae), a new species from the Balearic Islands, Spain. *Ann. Bot. Fennici* 53: 82-90.
- Herrando-Moraira, S.; Blanco-Moreno, J.M.; Sáez, L.; Galbany-Casals, M. 2016. Re-evaluation of the *Helichrysum italicum* complex (Compositae: Gnaphalieae): A new species from Majorca (Balearic Islands). *Collect. Bot. (Barcelona)* 35: e009.  
<<https://doi.org/10.3989/collectbot.2016.v35.009>>
- Iamonico, D. 2015. *Polycarpon tetraphyllum* subsp. *dunense* (P. Fraga & Rosselló) Iamonico. In: Raab-Straube, E. von & Raus, T. (eds.), Euro + Med-Checklist notulae 4. *Willdenowia* 45: 120-121.  
<<https://doi.org/10.3372/wi.45.45113>>
- Iamonico, D.; Domina, G. 2015. Nomenclatural notes on the *Polycarpon tetraphyllum* aggregate (Caryophyllaceae). *Pl. Biosystems* 149: 720-727.  
<<https://doi.org/10.1080/11263504.2015.1057260>>
- Kreutz, C.A.J. 2007. Beitrag zur Taxonomie und Nomenklatur europäischer mediterraner, nordafrikanischer und vorderasiatischer Orchideen. *Ber. Arbeitskrs. Heim. Orch.* 24: 77-141.
- Kreutz, C.A.J.; Rebbas, K.; De Belair, G.; Babali, B.; Ait-Hammou M. 2014. Neue Ergänzungen, Korrekturen und neue Erkenntnisse zu den Orchideen Algeriens. *Ber. Arbeitskrs. Heim. Orch.* 31: 140-199.
- Kreutz, C.A.J.; Rebbas, K.; Miara M.D.; Babali, B.; Ait-Hammou M. 2013. Neue Erkenntnisse zu den Orchideen Algeriens. *Ber. Arbeitskrs. Heim. Orchid.* 30: 185-270.
- Lawrence, G.M.H.; Günther, A.F.; Daniels, G.S.; Dolezal, H. 1968. *Botanico-Periodico-Huntianum*. Pittsburgh: Hunt Botanical Library.
- López-Alvarez, D.; López-Herranz M.L.; Betekhtin, A.; Catalán, P. 2012. A DNA barcoding method to discriminate between the model plant *Brachypodium distachyon* and its close relatives *B. stacei* and *B. hybridum* (Poaceae). *PLoS ONE* 7(12): e51058.  
<<https://doi.org/10.1371/journal.pone.0051058>>
- Moingeon, S.; Moingeon J.-M. 2011. *Ophrys decembris* spec. nov., early species of Mallorca belongs to the group of *O. fusca*. *J. Eur. Orch.* 43 : 69-78.
- Moingeon, S.; Moingeon, J.-M. 2013. *Ophrys xmelinae* hybr. nat. nov., a new hybrid of Orchidaceae in Mallorca (Balearic Islands - Spain). *J. Eur. Orch.* 45: 209-216.
- Nordenstam, B. 2005. (1696) Proposal to conserve the name *Senecio leucanthemifolius* against *S. varicosus* (Compositae). *Taxon* 54: 551-552.
- Paulus, H. 2011. Attackieren oder Kopulieren? Das ambivalente Verhalten von *Xylocopa* gegenüber der Sexualtäuschung von *Ophrys gregoriana* in Kreta (Orchidaceae und Insecta, Apoidea). *J. Eur. Orch.* 43: 35-60.
- Pujadas, A.J. 2002. El complejo de *Daucus carota* L. (Apiaceae) en la flora ibérica. *Anales Jard. Bot. Madrid* 59: 368-375.
- Pujadas, A.J. 2003. *Daucus* L. In: Nieto Feliner, G.; Jury, S.L.; Herrero, A. (eds.), *Flora iberica* 21: 97-125. Real Jardín Botánico, CSIC. Madrid.
- Pujadas, A.; Fraga, P. 2008. A new species of *Orobanche* (Orobanchaceae) from the Balearic Islands. *Bot. J. Linn. Soc.* 158: 722-729.  
<<https://doi.org/10.1111/j.1095-8339.2008.00916.x>>
- Pujadas, A.; Fraga, P. 2012. *Orobanche rumseiana* A. Pujadas & P. Fraga (Orobanchaceae), a new species from the Balearic Islands. *Candollea* 67: 65-74.  
<<https://doi.org/10.15553/c2012v671a9>>
- Ray, M.F. 1995. Systematics of *Lavatera* and *Malva* (Malvaceae, Malveae) a new perspective. *Pl. Syst. Evol.* 198: 29-53.
- Rita, J.; Capó, M.; Cursach, J. 2016. *Helosciadium x clandestinum* un nuevo híbrido aparecido en Menorca (Islas Baleares). *Fl. Montiberica* 63: 130-136.

- Rivas Martínez, S.; Pizarro, J.M. 2013. *Rhamnus* L. In Muñoz Garmendia, F.; Navarro, C.; A. Quintanar; A. Buira (eds.). Flora iberica vol. IX, Rhamnaceae-Polygalaceae: 11-50. Real Jardín Botánico-CSIC. Madrid.
- Rosselló, J.A.; Mus, M. 1998. Estudio morfológico, anatómico y cromatográfico de *Rhamnus* x *jacobi-salvadorii* O.Bolos y J.Vigo, supuesto híbrido de *R. alaternus* por *R. ludovici-salvatoris*. Candollea 43: 199-207.
- Rosselló, J.A.; Sáez, L. 2001. Index Balearicum: An annotated checklist of the vascular plants described from the Balearic Islands. Collect. Bot. (Barcelona) 25: 1-192.
- Rosselló, J.A.; Sáez, L. 2008. Index Balearicum (II). An annotated checklist of the vascular plants described from the Balearic Islands. Additions (2002-2007) and corrections. Fl. Montiberica 39: 58-64.
- Sa'ad, F. 1967. The Convolvulus species of the Canary Islands, the Mediterranean region and the Near and Middle West. Meded. Bot. Mus. Herb. Rijks. Univ. Utrecht. 1-287. Offset, Rotterdam.
- Sáez, L.; Rita, J.; Bibiloni, G.; Roquet, C.; López Alvarado, J. 2011. Systematics of the narrow endemic species *Brimeura duvigneaudii* (Hyacinthaceae). Orsis 25: 55-69.
- Sáez, L.; Rosselló, J.A. 2012. *Cotoneaster majoricensis* L. Sáez & Rosselló (Rosaceae), a new species from Majorca (Balearic Islands, Spain). Candollea 67: 243-253.
- Sánchez Pedraja, O.; Moreno Moral, G.; Carlón, J.; Piwowarzyk, R.; Laínz, M.; Schneeweiss, G.M. 2005 [onwards, last updated 30 March 2017]. Index of Orobanchaceae. ISSN: 2386-9666 [Accessed 31 March 2017]
- Stafleu, F.A.; Cowan, R.S. 1976-1988. Taxonomic literature ed. 2 Regnum Veg. Vols. 94, 98, 105, 110, 112, 116. The Hague, Boston.
- Wood, J.R.I.; Williams, B.R.M.; Mitchell, T.C.; Carine, M.A.; Harris, D.J.; Scotland, R.W. (2015). A foundation monograph of *Convolvulus* L. (Convolvulaceae). *PhytoKeys* 51: 1-282.  
<<https://doi.org/10.3897/phytokeys.51.7104>>